

ADDITIONAL BALD EAGLE NESTING RECORDS FROM SONORA, MEXICO

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The Bald Eagle (*Haliaeetus leucocephalus*) is known to breed in western Mexico only on coastal Baja California (Henny et al. 1978, *Auk* 95:424; Conant et al. 1984, *Raptor Res.* 18:36-37) and in the Rio Yaqui drainage of Sonora (Brown et al. 1987, *Wilson Bull.* 99:279-280), where the first reported nest from the mainland of Mexico was found. Discovery of a nest in an interior, non-coastal situation suggested that Bald Eagles could be nesting in other portions of Rio Yaqui drainage.

Three additional sections of Rio Yaqui drainage were surveyed by boat for breeding Bald Eagles during winter of 1986-87 and spring of 1987 (Fig. 1). These sections were chosen for survey because large, perennial rivers were believed to be suitable eagle nesting habitat, and because of ease of logistical access. A 105-km portion of the Rio Aros, largest tributary of the upper Rio Yaqui, between Natora (elevation 660 m) and the confluence with Rio Bavispe (confluence elevation 440 m) was surveyed twice. A 65-km stretch of Rio Bavispe between Granados (elevation 520 m) and the confluence with Rio Aros was surveyed once. And an 80-km portion of upper Rio Yaqui from the confluence of Rio Aros and Rio Bavispe to El Raspadero mine at the head of El Novillo Reservoir (el-

elevation 330 m) was surveyed three times. In addition known eagle nests previously identified by Brown et al. (1987, *Wilson Bull.* 99:279-280) along lower Rio Yaqui from El Novillo Dam and Reservoir to Onabas were resurveyed twice. All study rivers were surveyed by airplane on 25 January 1987. Survey dates and locations are summarized in Table 1. Survey dates were chosen to coincide with the expected eagle breeding season.

An average of 15-20 km of river were surveyed each day. All potential tree or cliff nest sites within 0.5 km of the river were examined with binoculars and spotting scopes. One to six observers looked for the presence of Bald Eagles each day from camp and from the river. Potential nest sites were examined more thoroughly in areas where adult eagles were seen flying or perched.

Three active Bald Eagle nests were discovered. One nest was located on Rio Aros and two nests were located on upper Rio Yaqui. Two nests (one on Rio Aros and one on upper Rio Yaqui) were found during boat surveys, and one nest was found during aerial survey on 25 January 1987. In addition an eagle nest in a large Hecho Cactus (*Pachycereus pectin-aboriginum*) on lower Rio Yaqui, described by Brown et al. (1987, *Wilson Bull.* 99:279-280),

Table 1. Bald Eagle survey dates and breeding activity at four active nests along the Rio Yaqui and tributaries, Sonora, Mexico, December 1986-July 1987.

STUDY AREA	SURVEY DATES	SUMMARY OF BREEDING ACTIVITY BY NEST	
<b>Rio Aros</b>	14-21 Dec.	<b>Cliff Nest</b>	
	25 Jan.	?	
	23 Feb.-2 Mar.	2 ad. present, 1 incubating	
<b>Rio Bavispe</b>	25 Jan.	No nests found	
	24-29 Mar.	No nests found	
<b>Upper Rio Yaqui</b>		<b>Fig Nest</b>	<b>Cliff Nest</b>
	21-23 Dec.	?	2 ad. seen in area
	25 Jan.	?	1 ad. incubating
	2-5 Mar.	2 ad. present, 1 incubating	2 ad., 2 nestlings
	29 Mar.-1 Apr.	2 ad. present, 1 incubating	2 ad., 2 lg. nestlings
<b>Lower Rio Yaqui</b>		<b>Hecho Nest</b>	
	25 Jan.	?	
	2 Apr.	2 ad., 2 lg. nestlings	
	12-15 July	1 ad., 1 fledgling nearby	

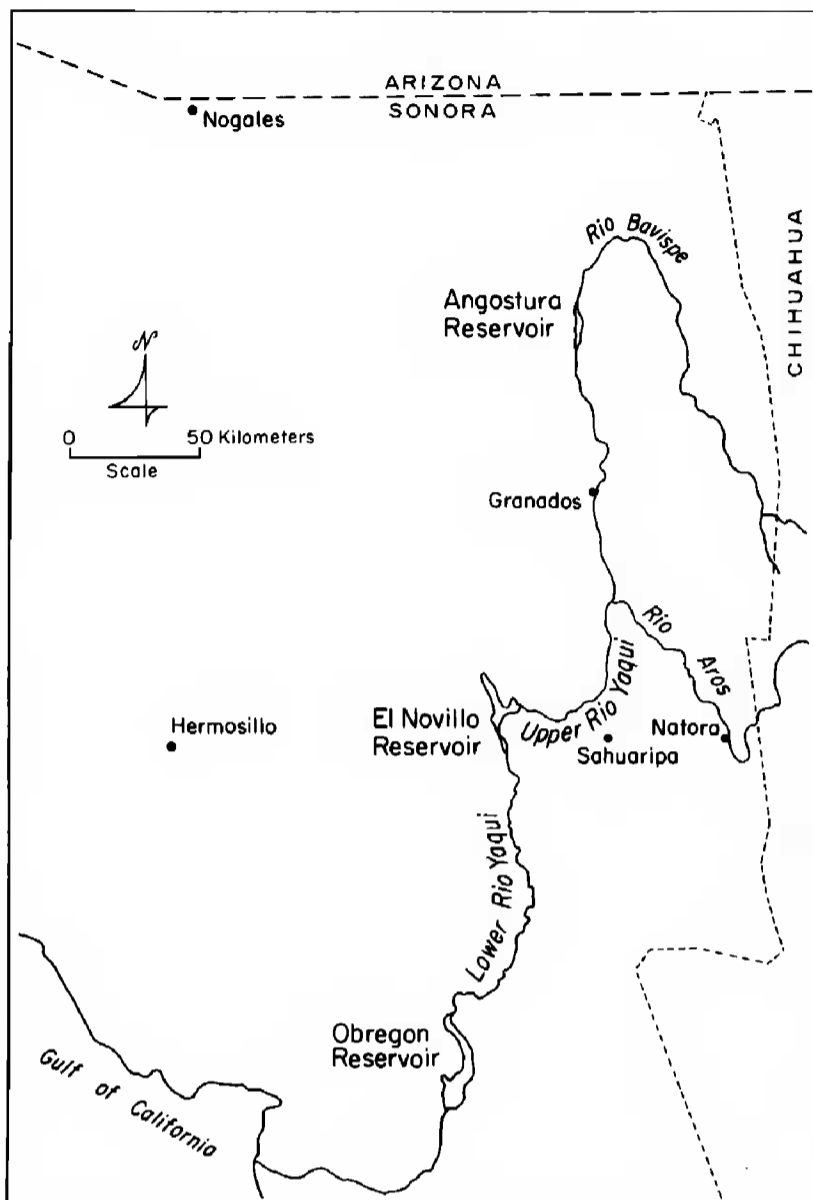


Figure 1. Study area for Bald Eagle nesting surveys in the Rio Yaqui drainage of Sonora, Mexico, from December 1986–July 1987.

was active during the spring of 1987. Thus, four active Bald Eagle nests were known for Sonora in 1987.

An adult Bald Eagle was discovered sitting in an incubating position in a large nest on Rio Aros (near 29°22'N, 108°58'W; elevation ca 520 m) on 27 February 1987. The nest was 60 m above the river surface on a horizontal ledge of a large, broken, northerly-facing cliff partially covered with vegetation. Outside diameter of the nest was estimated at 1.9–2.6 m and outside depth 0.3–0.6 m. The nest could not be checked for contents. Another adult eagle was perched nearby or flying in the immediate vicinity during the entire observation period from 0735–1210 H (Table 1). The success of this nest was unknown.

No eagle nests were discovered on Rio Bavispe surveys (Table 1).

An eagle nest on upper Rio Yaqui was discovered on 3 March (near 29°28'N, 109°15'W; elevation ca 420 m) 40 m above the river surface on a large northerly-facing cliff, against the roots and trunk of a large Fig tree (*Ficus petiolaris*). One adult eagle sat in the nest in an incubating

position during the observation period from 1145–1400 H, and another adult perched near the nest at 1315 H. The nest could not be checked for contents but was estimated to have an outside dia of 1.6 m and an outside depth of 2.3 m. The nest was again visited on 29–30 March. Both adults were present, and one adult sat in the nest in an incubating position during the entire observation period (Table 1). No nestlings could be seen in the nest and no prey deliveries were noted. The success of this nest was unknown.

A second nest on upper Rio Yaqui (near 29°11'N, 109°16'W; elevation ca 350 m) had been suggested when two adult eagles were observed near the site during a December 1986 boat survey of upper Rio Yaqui. A single adult eagle was seen sitting in the nest in an incubating position on 25 January 1987. The nest was 50 m above the river surface on a horizontal ledge on a large northerly-facing cliff. The nest was revisited on 4–5 March when two adults and two nestlings, estimated to be ca two wks old, were present. The nestlings were completely covered with dark gray down feathers and no contour feathers were visible. The nest was again visited on 31 March and 1 April, when two adults were present, as well as two large nestlings (ca six wks old) completely covered with contour feathers (Table 1). Nesting success at this site was unknown.

A potential alternate nest on upper Rio Yaqui was found 80 m above the river surface and 1.5 km further downstream on a horizontal ledge on a northerly-facing cliff. The nest was estimated to have an outside dia of 1.6 m and an outside depth of 0.6–1.0 m.

Eagle nests in Hecho Cactus and a dead Mesquite tree (*Prosopis glandulosa*) on lower Rio Yaqui described by Brown et al. (1987, *Wilson Bull.* 99:279–280) were visited on 2 April 1987. The Mesquite nest was not active, but two adults were present near the Hecho nest, which contained two completely feathered nestlings ca six wks old. Both nests were rechecked on 13 July. One adult was present near the Hecho nest, from which the nestlings had apparently fledged. The Mesquite nest had been destroyed in a fire, which appeared to have been set only a few days before by a local farmer to clear vegetation from his fields. A fledgling Bald Eagle was observed along lower Rio Yaqui 15 km south of the Hecho nest on 13 July (R. Mesta, pers. comm.) and could have been one of the young fledged from the Hecho nest (Table 1). However, the success of the Hecho nest was unknown.

Four active nests found in Sonora in 1987 establish that the range and population size of breeding Bald Eagles in the North American southwest are larger than previously known, and that the single active eagle nest discovered on lower Rio Yaqui in 1986 (1987, Brown et al., *Wilson Bull.* 99:279–280) was not an anomaly. Based on the extent of potentially suitable breeding habitat which has not yet been surveyed, breeding Bald Eagles could be relatively widespread along large, perennial rivers of Sonora.

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## AN UNUSUAL WINTER BALD EAGLE NEST IN SOUTHERN CALIFORNIA

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In recent decades Bald Eagle (*Haliaeetus leucocephalus*) populations have seriously declined throughout the southern portion of their range, and the species is listed as endangered by the U.S. Department of the Interior and many states (Bickett 1982). In California Bald Eagles have historically nested from southern California (primarily along the coast and the Channel Islands) north throughout much of central and northern California (Grinnell and Miller 1944). Small numbers of eagles still breed in northern California, primarily around large bodies of water in northeastern counties (Lehman 1979; McCaskie et al. 1979). Although Bald Eagles no longer breed in southern California, the area does support a small winter population (Garrett and Dunn 1981). During the 1986 mid-winter Bald Eagle survey, 598 Bald Eagles were reported in California (Jurek 1986), 55 of which were in southern California (south of Pt. Conception). During a 1986 statewide nesting survey, 68 pairs of adult Bald Eagles occupied breeding territories, and 44 successful breeding pairs produced 68 fledglings (Calif. Dept. of Fish and Game 1986). All nests were in the northern portion of the state at least 600 km north of the San Jacinto Valley. Here, we report on a recently constructed Bald Eagle winter nest in the San Jacinto Valley, southern California, and present observations of nest building and roosting behavior during a two yr period.

The San Jacinto Valley is located in west central Riverside County at an elevation of approximately 500 m. Land use is predominantly agriculture (grain and alfalfa (*Medicago sativa*) production; dairy farming) interspersed with fallow fields, waterfowl hunting and remnant patches of native riparian woodlands. The valley is surrounded on three sides by rugged hills (up to 808 m) of inland sage

scrub (*Artemisia californica*). Climate during winter months is mild with low precipitation ( $\bar{x}$  = 36.9 cm/yr) and temp seldom below freezing (Bailey 1966).

On 26 January 1985 at 0725 H we observed an adult Bald Eagle perched on a live Eucalyptus (*Eucalyptus globulus*) tree. The eagle flew to an adjacent agriculture field, picked up a stick in flight, returned to the same Eucalyptus tree and landed on the rim of a large stick nest where another adult eagle was perched. The second eagle took the stick in its bill and positioned it into the nest. Similar nest building behavior lasted for over an hour even while the ranch owner, whose residence is <60 m away, moved about under the nest tree. When both birds perched together on the same branch, we noticed a slight difference in their size. We tentatively concluded that we were observing a mated pair. A pair of Bald Eagles has been seen at the same tree each year for the previous four yr with one of the eagles usually arriving in late November and the other within a few days (F. Ybarrola, pers. comm.). Both leave the valley mid- to late-March, and the eagles first built a nest in winter 1981-82. We observed nest building activity on seven of twelve d in January and February 1985.

The Eucalyptus tree supporting the eagle nest is 35 m in height (measured by clinometer) with a breast height diameter (DBH) of 1.1 m—the tallest tree in a row of eleven trees and one of the tallest trees in the San Jacinto Valley. The nest is about 1.5 m in dia, 1.8 m in height, and 28.6 m above the ground near the main trunk. The closest major water impoundment, Lake Perris, is 3 km from the nest site. The nest site measurements are well within the range of those reported for active or formerly active sites in northern California (Lehman 1979).